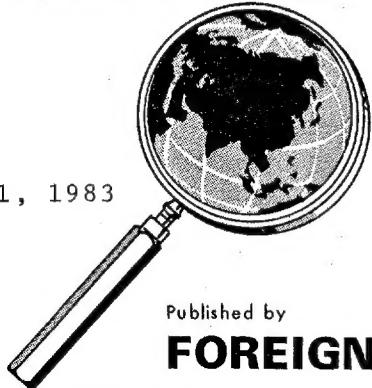


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The institute's solar observatory is located in the Sayan Mountains. It is equipped with horizontal telescopes and other instruments for studying the rotation and evolution of the solar corona, as well as configurations of magnetic fields in sunspots. An installation for the study of winds and wave processes in the upper atmosphere is located in the Badary area in the Sayan foothills. This installation automatically records radio signals reflected from the ionosphere.

(Two photographs are given showing the observatory in the Sayan Mountains, and G. Mashinich, a senior laboratory assistant, preparing the mirror of a solar telescope for observations.)

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Title: NEW FIREPROOF, LIGHTWEIGHT INSULATING MATERIAL FOR SHIPS

Primary source: Gudok, March 30, 1983, No. 74 (17509), p. 4, col. 8

Entire text: A material which has been developed at the Urals Scientific Research Institute for the Designing of Building-Materials Enterprises (Uralniistromprojekt) possesses remarkable properties. It is one-fifth as heavy as water, and it is completely incombustible. A panel of this material only 2 centimeters thick resists heat as well as a wall of brick with a thickness of one and a half bricks.

To demonstrate this, Candidate of Technical Sciences G. Tobol'skiy, the head of a laboratory, brought a gas torch almost all the way up to such a panel. He told me to touch its opposite side with my hand. Even after five minutes I could feel no heat, although a flame with a temperature of

Title: NEW RESEARCH SHIP "MOLCHANOV" TO WORK IN NORTH ATLANTIC

JF

Primary source: Vodnyy transport, March 31, 1983, No. 39 (8534), p. 4, col. 3

Entire text: A new vessel which has been added to the scientific fleet of the Murmansk Territorial Administration for Hydrometeorology and Monitoring of the Natural Environment is named after Professor P. A. Molchanov, a founder of Soviet aerology. This new scientific ship has arrived in Murmansk after completing its fifth experimental cruise.

Following a brief anchorage in its home port, the "Professor Molchanov" will make its first working cruise to the North Atlantic. It will take part in a national program of research of atmosphere-ocean interactions which are important for the study of changes in our planet's climate.

* * *

Title: SOLAR OBSERVATORY, IONOSPHERE STUDY POST IN SAYAN MOUNTAINS (caption)

JF

Primary source: Gudok, March 30, 1983, No. 74 (17509), p. 4, cols. 1-2

Entire text: The Institute of Earth Magnetism, the Ionosphere and Propagation of Radio Waves of the USSR Academy of Sciences' Siberian Branch is called the Siberian outpost of solar science and study of near-earth space. This institute is located in Irkutsk Oblast.

A large contingent of science associates and engineers works here. They have equipment for conducting studies in a number of fields.

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Primary source: Sovetskaya Belorus-siya, February 1, 1984, No. 27 (16011), p. 2, cols. 4-7

plans for plotting safe navigation routes in polar regions, on the basis of noises of ice fields.*

*See also the Daily SNAP, February 1, 1984, p. 2, col. 2

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Title: SOLAR OBSERVATIONS AT IRKUTSK INSTITUTE (caption)

Primary source: Sotsialisticheskaya Industriya, January 26, 1984, No. 21 (4412), p. 4, cols. 4-5

Entire text: The Irkutsk Institute of Earth Magnetism, the Ionosphere and the Propagation of Radio Waves of the USSR Academy of Sciences' Siberian Branch is called a Siberian outpost for studies of the sun and of near-Earth space.

(The photograph shows a telescope for observations of the sun in one of the institute's laboratories.)

* * *

Title: HIGH-STRENGTH, RADIATION-RESISTANT POLYAMIDE FILM

Primary source: Sotsialisticheskaya Industriya, January 26, 1984, No. 21 (4412), p. 4, col. 5

Entire text: In outward appearance, there is no difference between ordinary cellophane and a new brand of polyamide film which has been developed by the "Plastmassy" Research and Production Association in Moscow. This film has far outstripped its predecessors from the standpoint of 'inner' qualities, however. It can withstand temperatures in a range from minus 200 to plus 300 degrees with no change in its basic properties, for example. Film only 40-60 microns thick is capable of holding a weight of hundreds of kilograms. Moreover, the innovation is resistant to ultraviolet radiation, does not burn in fire and does not dissolve in organic solvents. These valuable 'qualities' of the film have attracted the attention of specialists in various branches of the economy.

* * *

Author: Shablyuk, A.

Title: MULTIPURPOSE N/C MACHINE TOOLS FOR FULLY AUTOMATED PRODUCTION

Extract: The first machine tool of the 'machining center' type with numerical programmed control has been manufactured at the Gomel' Machine-Tool Building Plant imeni Kirov. This machining center does, by itself, things that it takes as many as 10 machine tools to do: it drills, mills, bores.

Machines of this type will become the basis for fully automated production facilities. The machining center can take the place of as many as eight of its fellow machine tools in certain operations. Suffice it to say that its tool holder accommodates 30 different tools, which are changed automatically at the proper moment in accordance with a program stored in the machine's memory. Blanks are changed in the same fashion.

The operator has only to monitor instrument readings and the condition of tools. But these tasks, too, will soon be turned over to the clever machines by specialists of the Odessa Design Bureau of Special Machine Tools and by plant workers, through whose efforts the new machining center was developed. Designers, technologists and workers successfully incorporated advanced ideas and technical solutions which have allowed their innovation to be put in a class with the best world models. The machining center has had no counterparts in Soviet machine-tool building practice up until now. The innovation's merits are countless. I should like nevertheless to note the following. The machine tool has a table that turns in two directions, which allows a part to be machined from five directions with just a single mounting. And 'overhead' securing of the blank allows the task of automatic removal of filings to be performed more efficiently.

(A photograph is given showing workers assembling the new machine tools in a production section of the plant.)